

Slowing PD symptom progression with expertly led exercise

Parkinson's disease (PD) is a chronic disorder that affects movement and mobility. The disease typically leads to inactivity, reduced mobility, increased risk of falling, and social isolation. But, there are many things that can be done to slow disease progression, reduce functional and cognitive decline, and maintain quality of life for as long as possible. These include prescribed medication, surgery, and importantly, exercise.

Proven benefits of physical movement for Parkinson's disease

Many studies have shown that regular exercise training, when delivered and monitored by experienced therapists, has provided positive outcomes for people with PD. These outcomes include:

- Improved muscle strength and endurance
- Increased efficiency in completing activities of daily living
- Reduction in falls, functional decline and cognitive impairment
- Maintenance of mobility
- Improved mood, confidence and overall quality of life
- Increased confidence accessing the community, reducing social anxiety and depression.

Variety of exercise

When it comes to what exercises to include, studies have shown that specific types of training produce specific results. For example, aerobic training improves cardiovascular function, while progressive resistance exercise training (PRET) improves muscle strength. More specifically, when conducted in highly supervised conditions, and carried out at moderate intensity 2–3 times per week over an 8–10 week period, PRET can result in significant strength, balance and motor symptom gains in people with early to moderate PD¹.

Interestingly, studies have shown a range of interventions including general physical and aquatic therapy, exercise, treadmill, dance, and martial arts, all produce positive results². Because PD is a progressive condition, it's important for those diagnosed to maintain a longer term physical therapy plan in order to maintain their current state for as long as possible. Taking part in a variety of programs can be key to encouraging a long-term exercise strategy.



Neuroprotective effects of exercise

While considerable research has gone into the effectiveness of physical exercise on strength and physical function in those with PD, more recent attention has focused on the possibility that exercise may also have a neuroprotective effect³.

PD is caused by the depletion of neurons that normally produce the chemical transmitter dopamine. Dopamine helps the brain to control body movement, so abnormally low levels of these neurons give rise to difficulty in muscle tension and movement.

Studies on animals have shown that while exercising doesn't seem to increase the amount of dopamine in the brain, it does have an impact on the efficiency of the brain cells that use dopamine. And according to scientists at University of Pittsburgh, further animal studies show that exercise induces and increases beneficial neurotrophic factors, particularly GDNF (glial-derived neurotrophic factor) which reduces the vulnerability of dopamine neurons to damage.

Further study must continue to be undertaken to understand exactly how this data can be used to protect dopamine neurons to reduce the impact of PD, but it's clear that with such benefits, an appropriately delivered program of physical therapy should be considered a vital component of any PD treatment plan.



Evidence-based exercise programs

At CPA, we're passionate about incorporating the latest research findings into programs to ensure our clients continue to be provided with the gold standard of intervention.

Our Movement and Mobility programs feature strength, balance, stretch and boxing classes designed specifically for the needs of people diagnosed with PD. All programs are developed by specialised CPA exercise physiologists and based on the outcomes of qualified research and studies:

- **CPA Stretch** combines active and passive yoga stretching with elements of relaxation and mindfulness training which have been shown to improve quality of life
- **CPA Balance** is a structured class that focuses on dynamic and static balance skills. It is important to maintain this skill particular for people living with PD as it has been shown² to reduce the risk of falls through improved functional balance
- **CPA Strength** focuses on the big muscle groups and functional movements, where outcomes have been shown² to enhance strength and muscular endurance, a critical component for mobility maintenance and independence
- **CPA Boxing** offers aerobic exercise training with low to moderate intensity to help improve aerobic fitness and reduce fatigue in PD patients affected by mild or moderate disability
- **CPA Dance** provides a fun, social and interactive environment with simple dance moves at a moderate intensity
- **PD Warrior** is an advanced exercise program that incorporates both physical and cognitive activity for people in the early stages of PD. The program has been described as a game changer because it revolutionises the therapy delivered to people newly diagnosed with PD.

¹ Effectiveness of resistance training on muscle strength and physical function in people with Parkinson's disease: a systematic review and meta-analysis, Chloe Lau Ha Chung, Shamala Thilarajah, and Dawn Tan, Clinical Rehabilitation, Vol 30, Issue 1, pp. 11 – 23, Feb 2015 ² Robyn Gisbert, Margaret Schenkman; Physical Therapist Interventions for Parkinson Disease, Physical Therapy, Volume 95, Issue 3, 1 March 2015, Pages 299–305 ³ Parkinson's Foundation www.parkinson.org

For more information, get in touch with us:



Call us on 1300 888 378



Email us at ask@cerebralpalsy.org.au



Visit cerebralpalsy.org.au